Sibling Bullying Perpetration: Associations with gender, grade, peer perpetration, trait anger and moral disengagement

Abstract

This study investigated bullying amongst siblings in both traditional and cyber forms, and the associations of gender, grade, peer bullying perpetration, trait anger and moral disengagement. The participants were 455 children in grades 5 to 12 (262 girls and 177 boys with 16 unknown gender) who had a sibling. As the number of siblings who only bullied by technology was low, these associations were not able to be calculated. However, the findings showed that the percentage of sibling traditional bullying perpetration (31.6%) was higher than peer bullying perpetration (9.8%). Sibling bullies reported engaging in complex behaviours of perpetration and victimisation in both the physical and in cyber settings, although the number was small. Gender, trait anger, moral disengagement and bullying peers at school (but not grade) were all significantly associated with sibling traditional bullying perpetration. The implications of the findings are discussed for bullying intervention and prevention programs to understand childhood bullying in diverse contexts.

Keywords

Sibling bullying, cyberbullying, perpetration trait anger, moral disengagement

Substantial research exists for both traditional bullying and cyberbullying among school children (Salmivalli, Sainio, & Hodges, 2013; Wilton & Campbell, 2011). However, sibling bullying seems a neglected issue despite its pervasiveness at home. Researching the associations of bullying perpetration among siblings could provide valuable information for bullying prevention in this context, especially for parents. Although most schools strive to prevent and intervene effectively with student-to-student bulling, parents have not been provided with assistance in the prevention and intervention of sibling bullying (Skinner & Kowalski, 2013). While studies have examined peer bullying and cyberbullying perpetration amongst peers (Erdur-Baker, 2010; Hemphill et al., 2012; Lovegrove, Henry, & Slater, 2012), less is known about the risk factors and the frequency of sibling bullying perpetration (Duncan, 1999; Menesini, Camodeca, & Nocentini, 2010). Therefore, this research aimed to explore: (1) the frequency of bullying and cyberbullying perpetration amongst siblings; (2) the associations of gender, grade, peer bullying perpetration, trait anger and moral disengagement of sibling traditionalbullying and cyberbullying perpetration.

Characteristics of sibling relationships can have repercussions on other areas of their lives. Positive sibling relationships have been reported as having a helpful, protective function against stressful life events such as accidents, family disagreements or diseases (Gass, Jenkins, & Dunn, 2007; Wolke & Skew, 2012). Negative sibling relationships, however, have been found to be associated with internalising and externalising problems among children (Buist, Dekovic, & Prinzie, 2013). Sibling bullying is a type of negative sibling relationship, and is defined as emotional, physical or verbal aggressive behaviours amongst siblings, which involve repetition over time, purposeful intentions to dominate and harm, and a power imbalance (Menesini et al., 2010). Sibling bullying has been found to be associated with emotional problems such as anxiety, depression or pessimism (Duncan, 1999); social adjustment problems such as loneliness and social introversion (Duncan, 1999);

and behaviour problems such as hyperactivity or conduct disorders (Wolke & Samara, 2004). The prevalence of sibling bullying perpetration as bullies only and as both a bully and victim (bully- victims) has been shown to range from 38.1% to 85% (Skinner & Kowalski, 2013; Wolke & Skew, 2012). Skinner and Kowlaski's prevalence rates of 85% are probably so high because of the definition used of bullying, that is, fighting among siblings, without any imbalance of power. Notwithstanding, these rates are higher compared to the reported prevalence of peer bullying perpetration (Hemphill et al., 2012; Lovegrove et al., 2012). No Australian study has been found examining the frequency or perpetration of sibling bullying in traditional or cyber forms. Thus, this research aimed to fill this gap with its focus on sibling bullying among Australian children.

Siblings may also cyberbully each other via information and communication technologies (ICTs) such as the Internet or mobile phones. First, technology can provide anonymity to the sibling bullies. By hiding behind the technology, bullies can anonymously intentionally harm siblings and neutralise the effect of their victims' strategies of coping with bullying in traditional ways. Anonymity may also allow sibling bullies to escape attention and punishment from their parents for bullying at home. Furthermore, technology may enable a power imbalance between sibling bullies and their victims. The victimised siblings may lack physical power against their bullying sister(s) or brother(s); yet, they may achieve a digital type of power by using technology. Sibling bullies may prefer using technology to increase the impact of the humiliation by reaching a larger audience who are not limited to the home. Lastly, acquiring or producing digital materials for bullying purposes seems easier for siblings who share and spend most of their time together. Sibling bullies can easily obtain and share embarrassing voice or video records, or shameful photos or even distorted photoshop images of their sisters or brothers. Though the existing literature has studied cyberbullying

among peers (Hemphill et al., 2012; Salmivalli et al., 2013), there are no studies to date which have explored the frequency of cyberbullying amongst siblings.

Gender and age would seem to have possible associations with sibling bullying. Yet, findings about associations between gender and sibling bullying perpetration are conflicting. Boys have been reported as sibling bullies or bully-victims, whereas girls have been found to be sibling victims only in one study (Menesini et al., 2010). Another study, however, found that while boys were the victims of sibling bullying, there was no gender difference regarding sibling bullying perpetration (Duncan, 1999). Consequently, more evidence is required about the role of gender in sibling bullying perpetration. Age could also be a factor in sibling bullying. The existence of an older brother has been suggested as a risk for sibling bullying perpetration (Menesini et al., 2010; Wolke & Skew, 2011). Furthermore, while boys have been reported as frequently bullying their younger sisters, girls have been reported as frequently bullying their older siblings (Wolke & Skew, 2011). To date, there seems no empirical evidence indicating whether sibling bullying perpetration is more common among younger or older children. Therefore, this research aims to fill this gap by examining the frequency of sibling bullying perpetration in physical and cyber space.

A further association for sibling bullying perpetration is peer bullying at school. A bi-directional relationship seems to exist between sibling bullying and peer bullying experiences. Perpetrators can observe and experience bullying in the home from their parents or siblings, and then bully their peers at school. Conversely, perpetrators can observe and experience bullying from their peers at school and then bully their brothers and sisters. Sibling bullying perpetration has been found to be significantly associated to peer bullying perpetration (Duncan, 1999; Menesini et al., 2010). However, the evidence of this relationship is scant and no Australian study to date has explored the possible bi-directional nature of sibling bullying perpetration and peer bullying perpetration.

Trait anger is posited as another risk factor for sibling bullying perpetration. Trait anger is defined as a tendency to react with anger across time and situations, where individuals become angry often in various situations, as opposed to state anger which is momentary anger not dispositional in nature. A positive relationship between higher levels of trait anger and peer bullying perpetration has been found among peers (Camodeca & Goossens, 2005). Moreover, Lovegrove et al. (2012) investigated factors of bullying involvement among American middle school children, and reported that higher feelings of anger were associated with a higher possibility of being in the bully only and bully-victim groups. Despite the associations shown between trait anger and traditional peer bullying perpetration, no research has examined the associations between anger and bullying and cyberbullying perpetration of siblings to date.

Moral disengagement can also play an important role in bullying behaviour. Moral disengagement is defined as the cognitive processes to justify destructive behaviours which normally violate one's internal moral standards (Bandura, 2002). Peer only-bully and bully-victim offenders have been shown to have higher levels of moral disengagement scores compared to victims (Almeida, Correia, & Marinho, 2010) and non-involved students (Obermann, 2011). However, no studies were locatedabout the role of moral disengagement in sibling bullying and cyberbullying perpetration.

This study firstly investigated the frequency of bullying and cyberbullying perpetration among siblings. The second research question was about the correlates of gender, grade, peer bullying perpetration, trait anger and moral disengagement with traditional sibling bullying and sibling cyberbullying perpetration.

Method

Participants

Five hundred Australian students from grades 5 to12 participated in the study. The forty-five children who reported not having a sibling were excluded from the analysis leaving a total of 455 participants. Of these participants, 262 (57.6%) were girls and 177 (38.9%) boys with 16 (3.5%) of unknown gender. The majority of the participants were high school students 374 (82.2%), and 76 (16.7%) were primary school students with 5 (1.1 %) unknown level of schooling. Most of the students were in grade 10 (19.8%) and 11 (27.3%). Parents were mainly university graduates (mothers 42.6% and fathers 44.6%).

Measures

An anonymous, self-report, paper-based survey with five sections was conducted. The first section contained *the Traditional Bullying and Cyberbullying Questionnaire (TB&CBQ)* (Campbell, Spears, Slee, Butler, & Kift, 2012) examining peer bullying and cyberbullying victimisation and perpetration. *TB&CBQ* demonstrated moderate reliability for this study (Kuder-Richardson-20= 0.68). It had two parallel forms. The first part asked about peer bullying victimisation and perpetration. The following definition of traditional bullying was initially given:

"There are lots of different ways to bully someone. A bully wants to hurt the other person (it's not an accident) and does it repeatedly and unfairly (the bully has some advantage over the victim). Sometimes a group of students will bully another student."

Then, two filter questions "Have you been bullied this year? (since January this year)" and "Have you bullied someone this year? (since January this year)" were used to identify peer victims and bullies. If the answer was "no", participants were asked to skip to the next question. If the answer was "yes", participants were directed to report the frequency of their peer victimisation or perpetration. The second part was about cyberbullying victimisation and

perpetration. The same procedure above was applied after providing the following definition of cyberbullying:

"Cyberbullying is when one person or a group of people repeatedly try to hurt or embarrass another person, using their computer or mobile phone, to use power over them. With cyberbullying, the person bullying usually has some advantage over the person targeted, and it is done on purpose to hurt them, not like an accident or when friends tease each other."

The second section contained *the Sibling Bullying and Cyberbullying Questionnaire* (*S-TB&CBQ*) investigating bullying and cyberbullying involvement as sibling bullies and victims. *The S-TB&CBQ* demonstrated a moderate reliability for this study (Kuder-Richardson-20= 0.68). *TB&*CBQ's format was used for S-*TB&CBQ*, with instructions reformulated following the sibling bullying questionnaire of Menesini et al. (2010) which was an adapted version of Wolke and Samara (2004). A prompt initially stated that bullying and cyberbullying can happen among siblings. Participants were, then, asked to think of their sister or brother. If they had more than one sibling, they were told to choose the one closest to their age to ask if they bullied or were bullied by them. If they were an only child, they skipped this section. *TB&*CBQ's filter questions were adapted with questioning if the participants bullied or cyberbullied their siblings; or they were bullied or cyberbullied by their siblings. While responding to these questions, participants were asked to consider the definitions of traditional and cyberbullying provided in the first section.

The third section comprised *the Trait-Anger Scale (TAS)* of *The State/Trait Anger Expression Inventory for Children and Young people (STAXI-C/A)* (Spielberger, Jacobs, Brunner, & Lunsford, 2002). This scale examined children's general inclinations and manifestations of anger. *TAS* is a 12-item self-report inventory and each item is rated on a three point scale. Example items are 'I get angry quickly' and 'I get furious when scolded in

front of others'. For the present study, the inter-item reliability coefficient of the *TAS* was 0.85.

In the fourth section, *the Moral Disengagement Scale* (Hymel, Rocke-Henderson, Bonanno, 2005) explored a participant's tendency of using cognitive mechanisms while conducting harmful behaviours in interpersonal relationships. The scale assesses the four mechanisms of moral disengagement which are cognitive restructuring, minimizing agency, distortion of negative consequences and dehumanization of the victim. It is an 18-items self-report survey which is rated on a 4-point Likert scale. Example items are 'It's okay to pick on losers' and 'Some kids need to be picked on just to teach them a lesson'. For the current research, the alpha coefficient was 0.84. Demographic information of gender, grade level, mother's and father's education level were obtained in the last section.

Procedure

Institutional ethics committee approval was obtained and active parental consent and child assent was collected. The survey took about 10-15 minutes to complete. Data collection took place between November and December 2012, when students had spent almost ten months together at school. Data were collected in different settings. Some students were recruited from two Muslim private schools, and the rest completed the survey in shopping centres, public parks, and at a swimming pool in south-east Queensland, Australia. There were 178 Muslim students. An independent samples t-test was conducted to compare Muslim and other students on trait anger and moral disengagement scores. There were no significant differences between Muslim and other students in terms of trait anger $t(497)= -.22$, $p > .05$ and moral disengagement $t(498)= -.30$, $p > .05$. This paper uses data collected in a larger study assessing peer bullying, cyberbullying and sibling bullying. Sibling bullying perpetration results are only presented in this paper.

Results

Data analysis

All participants were categorised first descriptively by their bully status; whether it was traditional sibling bullying or cyberbullying and whether the participant was a pure bully or bully and a victim. While this can result in 6 categories of pure traditional bully, pure cyber bully, combined sibling traditional bully and cyber bully, traditional'bully-victim', cyber 'bully-victim' and traditional and cyber 'bully-victim'. There were also other combinations such as a traditional bully who was a also a cyber 'bully-victim'. As cyberbullying perpetration was extremely low (only two participants were pure cyber bullies and none were cyber 'bully-victims') all cyberbullying groups were excluded from further analysis, leaving two groups of traditional pure bully and traditional bully-victim. Independent sample t-tests were conducted to examine the influence of gender and age on trait anger and moral disengagement. A multinomial logistic regression analysis was conducted with gender, peer traditional bullying, trait anger and moral disengagement and traditional pure bully and 'bully-victim'.

Descriptive Statistics

Table 1 shows the frequencies and percentages of siblingtraditionalbullying and cyberbullying perpetrationby gender and grade. There were 36.9% participants who self-reported as bullying their siblings (either as a pure traditional bully or a pure cyberbully or bullying both in the traditional and cyber way; a sibling 'bully-victim' group or a cyber 'bully-victim' or a sibling bully-victim and cyber 'bully-victim'). Another four group combinations of traditional and cyber forms of sibling bullying accounted for 2.1%. Only two participants reported being a sibling pure cyberbully, and none self-identified as a sibling cyber 'bully-victim'. More girls (42%) reported traditionally bullying their siblings with

33.2% boys reporting that they had been a sibling bully in the previous 12 months. While 43.4% of the primary school students reported having bullied their siblings, 38% of the high school students reported perpetrating sibling bullying.

Table 1. *Descriptive statistics for sibling bullying and cyberbullying perpetrators*

Perpetrator Types	Whole Sample *f(%)*	Gender *f(%)*		Grade *f(%)*	
		Girls	Boys	Primary	High
Trad. bully-only	57(12.5)	33(12.6)	22(12.4)	5(6.6)	52(13.9)
Trad'bully-victim'	87(19.1)	63(24.0)	19(10.7)	25(32.9)	60(16.0)
Cyberbully-only	2(0.4)	-	2(1.1)	-	2(0.5)
Cyber 'bully-victim'	-	-	-	-	-
Trad. and Cyber bully	3(0.7)	1(0.4)	2(1.1)	-	3(0.8)
Trad. and Cyber 'bully-victim'	19(4.2)	6(2.3)	11(6.2)	2(2.6)	16(4.3)
Trad. bully+ Cyber 'bully-victim'	1(0.2)	-	1(0.6)	-	1(0.3)
Trad. and Cyber Bully+ Trad.victim	2(0.4)	2(0.8)	-	1(1.3)	1(0.3)
Trad.bully + Sib. and Cyber victim	6(1.3)	4(1.5)	2(1.1)	-	6(1.6)
Cyberbully + Trad..and Cyber victim+	1(0.2)	1(0.4)	-	-	1(0.3)
Total	178(39.0)	110(42.0)	59(33.2)	33(43.4)	146(38.0)

Notes:. Ns vary (N= 455 for the whole sample; N=262 for the girls and N= 177 for the boys; and N= 76 for the primary school students and N= 374 for the high school students)

Sibling cyberbullying as pure bully or 'bully-victim' were extremely low and excluded from all further analysis. This exclusion applied to other low frequency groups of traditional bully and cyber bully; and traditional and cyber 'bully-victim' groups. Consequently, only sibling bullying perpetrator and sibling 'bully-victim' groups were considered in further analysis. In addition to the sibling bullying perpetration at home, participants' peer bullying perpetration at school was also examined. To avoid confusion with sibling bullying, peer bullying perpetration descriptives are not included in Table 1. Twenty-four of the participants (5.4%) were peer pure-bullies with more girls (*n*=13) than boys (*n*=10); and with more high schoolers (*n*=4) than primary schoolers (*n*=20). Of the participants, 4.4% (*n*=20) were peer bully-victims with more girls (*n*=13) than boys (*n*=7); and with more high schoolers (*n*=12) than primary schoolers (*n*=8). Moreover, the bi-directional relationship between peer bullying perpetration at school and sibling bullying perpetration at home was also explored. Of those peer bullies and bully-victims at school,

43.2% also bullied their siblings. On the other hand, only 13.2% of the sibling bullies and bully-victims at home bullied their peers at school. As cyberbullying perpetration amongst siblings was excluded, participants' peer cyberbullying perpetration frequencies are not reported.

Gender and grade differences for the two associated variables

Two independent samples t-tests were conducted to examine gender and grade differences of the two associated variables which were trait anger and moral disengagement. There were no significant differences between girls (M= 23.30, SD= 5.40) and boys (M= 24.17, SD= 4.70) who bullied their siblings in trait anger scores $t(134)= -0.90$, $p > .05$. However, there was a significant gender difference between girls (M= 35.50, SD= 7.37) and boys (M= 38.82, SD= 7.49) who bullied their siblings in moral disengagement scores, $t(134)= -2.39$, $p < .05$, with boys scoring higher than girls in moral disengagment. Grade levels of the students were grouped in two categories as primary and high school (Grades from 5 to 7 were grouped primary school, and grades from 8 to 12 were assigned to high school). There were no significant differences between primary (M= 23.53, SD= 6.08) and high school students (M= 23.53, SD= 6.08) who bullied their siblings in their scores on trait anger, $t(139)= 0.07$, $p > .05$ or moral disengagment primary school students (M= 37.10, SD= 7.98) and high school students (M= 36.52, SD= 7.22) $t(139)= 0.38$, $p > .05$.

Factors associated with sibling bullying perpetration

Before conducting the multinomial logistic regression analysis, multicollinearity among trait anger and moral disengagement was checked by estimating the correlations. Results showed that the estimate was 0.23 between trait anger and moral disengagement,

indicating that neither of the variables was strongly interrelated. Thus, both were added to the analysis.

To examine the association of sibling traditionalbullying perpetration, a multinomial logistic regression analysis was performed using SPSS software (version 21 for Windows). Stepwise forward entry method was used to estimate the contribution of each variable to the model. The dependent variable was composed of the two groups which were sibling traditionalpure bully and traditional 'bully-victims'. As significant differences were identified for gender but not for grade, gender was added as a predictor in the model. Therefore, the independent variables were gender, peer bullying perpetration, trait anger and moral disengagement, which were simultaneously included in the analysis. Non-perpetrators who were victims or not-involved in a sibling bullying or a cyberbullying incident were the reference group.

Table 2 shows the results of the multinomial logistic regression analysis. In comparing *the sibling traditional bully-only group* with the non-perpetrators, the relative risk of being in the sibling traditional bully-only group was significantly related to anger (b= 0.47, Wald $x^2(1)$= 1.33, $p < .05$) and moral disengagement (b= 0.06, Wald $x^2(1)$= 4.38, $p < .05$). Odds ratio values indicated that when anger and moral disengagement increase one more unit, the changes of the odds of belonging to sibling traditional bully-only group are 1.10 and 1.06, respectively. In other words, as anger and moral disengagement increased, participants are more likely to be in the sibling traditional bully-only group than the non-perpetrator group. Gender and peer traditional bullying perpetration were not associated with the sibling traditional bully-only group.

Compared to the non-perpetrators of sibling bullying, gender (b= 1.59, Wald $x^2(1)$= 12.67, $p < .001$), peer traditional bullying perpetration (b= -1.40, Wald $x^2(1)$= 8.02, $p < .01$)

and anger (b= 0.15, Wald $x^2(1)$= 14.11, $p < .001$) were significantly associated with being in *the sibling traditional bully-victim* group. The odds ratio indicated that the change in the odds of belonging to the sibling traditional bully-victim group was 4.92 for gender. In other words, compared to the non-perpetrator group, the odds of a girl to be in the sibling traditional bully-victim group are 1/4.92= 0.20 times more than a boy. Moreover, according to the odds ratio value, as involvement changes from peer non-perpetrator to peer traditional bullying perpetrator, the odds of belonging to the sibling traditional bully-victim perpetrator group is 0.25. Put differently, compared to the non-perpetrators of sibling bullying, the odds of a peer traditional bullying perpetrator to be in the sibling traditional bully-victim group is 1/0.25= 4.00 times more than a non-perpetrator of peer bullying. Lastly, the odds ratio indicated that if trait anger increased one more unit, the change of the odds of belonging to sibling traditional bully-victim group is 1.16. In short, as trait anger increased, participants were more likely to be in the sibling traditional bully-victim group than the sibling non-perpetrator group. There was not a significant association between moral disengagement and sibling traditional bully-victim group.

Table 2. *Multinomial logistic regression analysis*

	Sibling TradBully-Only			Sibling TradBully-Victim		
	B (SE)	Wald	OR [95% CI]	*B (SE)*	Wald	OR [95% CI]
Gender						
Girls	0.47 (0.41)	1.33	1.60 [0.72, 3.55]	1.59 (0.45)***	12.67	4.92 [2.05, 11.85]
Boys (ref.)	.	.	.	.	.	.
Peer Trad. Bully/Bully-victim Involvement						
Non-perpetrators	0.22 (0.70)	0.10	1.24 [0.32, 4.88]	-1.40 (0.49)**	8.02	0.25 [0.09, 0.65]
Perpetrators (ref.)	.	.	.	.		.
Anger	0.09 (0.04)*	4.76	1.10 [1.00, 1.19]	0.15 (0.04)***	14.11	1.16 [1.07, 1.25]
Moral Disengagement	0.06 (0.03)*	4.38	1.06 [1.00, 1.13]	0.04 (0.03)	2.11	1.04 [0.99, 1.10]

Notes: Trad. means traditionalReference group was the non-perpetrators. *B*= Regression Weight. *SE*= Standard Error. OR= Odds Ratio. CI= Confidence Interval. *p< 0.05, **p<0.01, ***p<0.001. R^2= .20 (Cox & Snell), .24 (Nagelkerke). Model $x^2(8)$= 58.22, p<.001.

Discussion

This research examined the frequency of traditionalsibling bullying and cyberbullying perpetration, and the association of gender, peer bullying perpetration, trait anger and moral disengagement with sibling bullying perpetration. The results of the current investigation indicated that more than 30% of the children reported having traditionally bullied their sisters or brothers whereas only about 10% reported having bullied their peers. This compares with other studies which have indicated that sibling bullying is more common than peer bullying (Skinner & Kowalski, 2013; Wolke & Skew, 2012). An interesting finding was that cyberbullying was of such a low frequency amongst this sample of siblings, that no statistical analysis could be conducted. As this was one of the first studies to measure the frequency of sibling cyberbullying, it is difficult to ascertain the reasons for this result. Perhaps, it may be that being in close physical proximity with one's siblings means that technology is not used to bullying. Another possibility could be that siblings could fear being found out by parents if they cyberbullied their siblings since it may mean a loss of access to technology. However, there were some interesting results shown in the complexity of the roles in both the physical and cyber worlds as pure bullies, 'bully-victims' and various combinations of sibling bullying. This is similar to earlier research suggesting that traditional and cyberbullying peer perpetrators were involved in complex perpetration and victimisation experiences (Tokunaga, 2010). Therefore, behaviours of bullying perpetrators either amongst siblings or peers seem to be more more complicated than expected. This finding implies that any prevention attempt should consider bullying perpetration among children as a complex behaviour which involves bullying and victimisation in physical and/or online environments at home and at school.

The frequency of engaging in sibling bullying perpetration was found to be higher for younger children (grades 5 to 7) than older ones (grades 8 to 12) Girls were found to be more likely to be sibling bullies than boys. This finding is different from research reporting that boys were more at risk for being a sibling bully (Menesini et al., 2010). Future studies researching gender differences in sibling bullying are needed to resolve this issue. Being engaged in peer bullying at school was found to be associated with sibling bullying perpetration. In fact, peer bullies likelihood of bullying a sibling was four times higher than children who did not bully their peers. This finding is in parallel with earlier research reporting that peer bullies or bully-victims also bully their siblings at home (Duncan, 1999). Furthermore, the results of this study revealed some bi-directionality between sibling and peer bullying with almost half of the peer bullies (43.2%) bulling their siblings, but only 13.2% of the sibling bullies bullying their peers at school. In other words, while the likelihood of peer bullies acting as sibling bullies was high, the possibility of sibling bullies engaging in bullying at school was less likely. This finding implies that home-related factors such as being the older brother (Menesini et al., 2010), being a girl with older siblings (Wolke & Skew, 2011) or older brother/younger sister pairs (Aguilar, O'Brien, August, Aoun, & Hektner, 2001) may increase the chances of bullying perpetration among siblings at home. In contrast, the absence of such home relevant factors may decrease sibling bullies possibility of engaging in peer bullying.

Trait anger was associated with both being a pure bully and a bully-victim amongst the siblings in this study. A similar relationship between anger and peer bullying perpetration with peers has been reported in earlier investigations (Camodeca & Goossens, 2005; Lovegrove et al., 2012). Thus, angry children appear to be at high risk regarding bullying perpetration including peer and sibling forms. However, there is an absence of research regarding the link between anger and sibling bullying perpetration.

Morally disengaged children were found to be more likely to bully their siblings. This result is consistent with the findings from extant peer bullying literature which suggests that higher levels of moral disengagement are related to bullying perpetration among peers (Almeida et al., 2010; Obermann, 2011).However, moral disengagement was only associated with sibling pure bully perpetrators in this study. This finding is inconsistent with the research indicating that moral disengagement is associated with both being a bully only and a bully-victim (Almeida et al., 2010; Obermann, 2011). Empathy may play a role for this difference. Menesini et al. (2010) reported that lower levels of empathy were related to sibling bullying perpetration, concluding that empathy helps children to be aware of the damaging impacts of their behaviours. Since bully-victims have a victim role as well as being a perpetrator, they could be expected to be more emphatic towards their victims; and thus be more morally engaged. On the other hand, children who bully only may not be as aware of the consequences of their behaviour, and thus may have less empathy and higher moral disengagement.

Limitations, Strengths and Future Research

There are some limitations with this study. First, because of the selection bias in participant selection and the low sample size, the results of this research cannot be generalised. Also, participants' parental education levels were high and participants did not have a homogenous cultural background. Although no statistical significant differences were found between Muslim and other students, some differences originating from culture might be expected to exist.. Thus, future cross validation investigations are recommended with different parental education levels and homogenous cultural backgrounds. In addition, causality cannot be inferred in this research because it was correlational in nature. Moreover, we acknowledge the limitations of self-report data, even though we included two definitions. Despite these limitations, this study contributed to the literature by investigating the nature and extend\t of

sibling bullying amongst Australian children whose sibling bullying perpetration involvement hadnot been researched . For the first time in the literature, this study revealed that cyberbullying is not common amongst siblings as siblings seem to engaging in bullying at home in physical environment more than in cyber space. Additionally, this study is one of the first which particularly focuses on the associations of some variables with sibling bullying perpetration behavior. In conclusion, this research found that sibling traditional bullying is a serious concern. Unfortunately as Skinner and Kowalski (2013) admit while there are intervention programs and protocols for schools for the prevention and intervention of peer bullying, there are as yet no evidence based practices for parents for sibling bullying.

REFERENCES

Aguilar, B., O'Brien, K. M., August, G. J., Aoun, S. L., & Hektner, J. M. (2001). Relationship quality of aggressive children and their siblings: A multi-informant, multimeasure investigation. *Journal of Abnormal Child Psychology, 29,* 479 – 489.

Almeida, A., Correia, I., & Marinho, S. (2010). Moral disengagement, normative beliefs of peer group, and attitudes regarding roles in bullying. *Journal of School Violence*, *9,* 23-26. doi:10.1080/15388220903185639

Bandura, A. (2002). Selective moral disengagement in the exercise of moral agency. *Journal of Moral Education, 31,*101-119. doi:10.1080/0305724022014322

Buist, K., Deković, M., & Prinzie, P. (2013). Sibling relationship quality and psychopathology of children and adolescents: A meta-analysis. *Clinical Psychology Review, 33,* 97–106. doi:10.1016/j.cpr.2012.10007

Camodeca, M., & Goossens, A. (2005). Aggression, social cognitions, anger and sadness in bullies and victims. *Journal of Child Psychology and Psychiatry, 46,* 186–197. doi: 10.1111/j.1469-7610.2004.00347.x

Campbell, M., Spears, B., Slee, P., Butler., D., & Kift., S. (2012). Victims' perceptions of traditional and cyberbullying, and the psychosocial correlates of their victimisation, *Emotional and Behavioural Difficulties, 17,* 389-401. doi:10.1080/13632752.2012.704316

Duncan, R. D. (1999). Peer and sibling aggression: An investigation of intra- and extra-familial bullying. *Journal of Interpersonal Violence, 14,* 871–886. doi:10.1177/088626099014008005

Erdur-Baker, Ö. (2010). Cyberbullying and its correlation to traditional bullying, gender and frequent and risky usage of internet-mediated communication tools. *New Media & Society, 12,* 109-125. doi:10.1177/1461444809341260

Gass, K., Jenkins, J., & Dunn, J. (2007). Are sibling relationships protective? A longitudinal study. *Journal of Child Psychology and Psychiatry, 48,* 167–175. doi:10.1111/j.1469-7610.2006.01699.x

Hemphill, S. A., Kotevski, A., Tollit, M., Smith, R., Herrenkohl, T. I., Toumbourou, J. W., & Catalano, R. F. (2012). Longitudinal predictors of cyber and traditional bullying perpetration in Australian secondary school students. *Journal of Adolescent Health, 51,* 59-65. doi:10.1016/j.jadohealth.2011.11.019

Hymel, S., Rocke-Henderson, N. R., & Bonanno, R. A. (2005). Moral disengagement: A framework for understanding bullying among young people. *Journal of Social Sciences, 8*(1), 1-11.

Lovegrove, P. J., Henry, K. L., & Slater, M. D. (2012). Examination of the predictors of latent class typologies of bullying involvement among middle school students. *Journal of School Violence, 11*, 75-93. doi:10.1080/15388220.2011.631447

Menesini, E., Camodeca, M., & Nocentini, A. (2010). Bullying among siblings: The role of personality and relational variables. *British Journal of Developmental Psychology, 28*, 921-939. doi:10.1348/026151009X479402

Obermann, M. L. (2011). Moral disengagement in self-reported and peer-nominated school bullying. *Aggressive Behaviour, 37*, 133–144. doi:10.1002/ab.20378

Renati, R., Berrone, C., & Zanetti, M. A. (2012). Morally disengaged and unempathic: Do cyberbullies fit these definitions? An exploratory study. *Cyberpsychology, Behaviour, and Social Networking, 15*, 391-398. doi:10.1089/cyber.2012.0046

Salmivalli, C., Sainio, M., & Hodges, E.V. (2013). Electronic victimization: Correlates, antecedents, and consequences among elementary and middle school students. *Journal of Clinical Child & Adolescent Psychology*. Advance Online Publication. doi: 10.1080/15374416.2012.759

Skinner, J., & Kowalski, R. M. (2013). Profiles of sibling bullying, *Journal of Interpersonal Violence*. Advance Online Publication.doi: 10.1177/0886260512468327

Spielberger, C. D., Jacobs, G. A., Brunner, T. M., & Lunsford, G. D. (2002). *The state-trait anger expression inventory for children and adolescents (STAXI-C/A)*. Psychological Assessment Resources, Inc.

Tokunaga, R. S. (2010). Following you home from school: A critical review and synthesis of research on cyberbullying victimization. *Computers in Human Behavior*, *26*, 277–287. doi:10.1016/j.chb.2009.11.014

Wilton, C., & Campbell, M. A. (2011). An exploration of the reasons why adolescents engage in traditional and cyberbullying. *Journal of Educational Sciences and Psychology, 1*(2), 101–109.

Wolke, D., & Samara, M. (2004). Bullied by siblings: Association with peer victimisation and behaviour problems in Israeli lower secondary school children. *Journal of Child Psychology and Psychiatry*, *45*, 1015–1029. doi:10.1111/j.1469-7610.2004.t01-1-00293.x

Wolke D., & Skew, A. (2011). Bullied at home and at school: Relationship to behaviour problems and unhappiness. In McFall, S. (Eds.), *Understanding society: Early findings from the first wave of the UK ' s household longitudinal study* (pp. 23–32). London: Economic Social Research Council.

Wolke, D., & Skew, A. J. (2012). Bullying among siblings. *International Journal of Adolescent Medicine and Health*, *24*, 17–25. doi: 10.1515/ijamh.2012.004